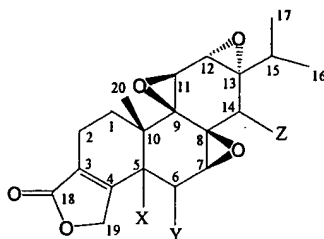


WHAT IS CLAIMED IS:



1. The triptolide derivatives having the structure represented by the formula (1) shown as below, or pharmaceutically acceptable salts thereof, or their optical diastereoisomers:



(1)

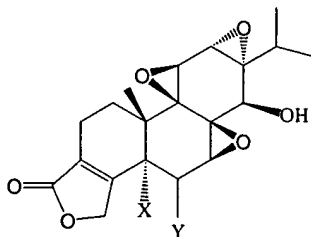
Wherein C-5 and C-6 are connected through single or double carbon-carbon bond; when C-5 and C-6 are connected by single bond, X and Y independently represent hydrogen, oxygen, hydroxyl, halogen, alkoxy, mercapto, $-NR_1R_2$, $-SR$, $-OCOR$, $-OSO_2OR$, or $-OPO(OH)_2$ linked to C-5 or C-6, in which R is $-(CH_2)_nCO_2Na$, $-(CH_2)_nCO_2K$ 或 $-(CH_2)_nCH_3$, $n=1-6$;

Z is hydrogen, oxygen, hydroxyl, halogen, alkoxy, mercapto, $-NR_1R_2$, $-SR$, $-OCOR$, $-OSO_2OR$, or $-OPO(OH)_2$ linked to C-14, in which R is $-(CH_2)_nCO_2Na$, $-(CH_2)_nCO_2K$ 或 $-(CH_2)_nCH_3$, $n=1-6$;

In the above formula (1), “-” that attaches to “X”, “Y” and “Z” represents “” and “” as well;

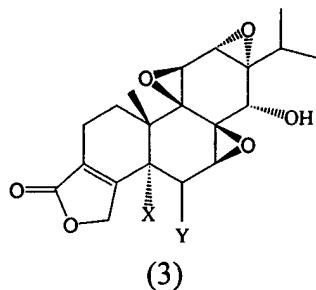
X and Y are not allowed to be hydrogen at the same time.

2. The triptolide derivatives of claim 1, wherein the configuration of X is α (R), that of Y is (R) or (S), and Z is β -OH(R) shown as formula (2):

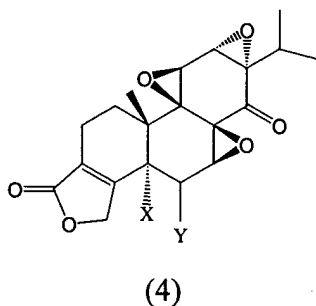


(2)

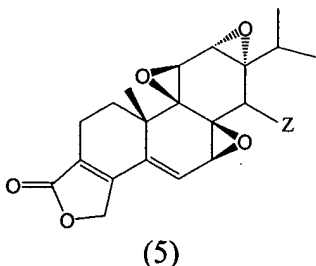
3. The triptolide derivatives of claim 1, wherein the configuration of X is α (R), that of Y (R) or (S), and Z is α -OH(s) shown as formula (3):



4. The triptolide derivatives of claim 1, wherein the configuration of X is α (R), that of Y (R) or (S), and Z is O shown as formula (4):



5. The triptolide derivatives of claim 1, wherein C-5 and C-6 are connected by double bond, and the configuration of Z is R or S, or Z=O as shown formula (5):



6. The triptolide derivatives of claim 1, including the following: (5R)-5-hydroxytriptonide, (5R)-5-hydroxytriptolide, (5R)-5-hydroxy-14-epitriptolide, $\Delta^{5,6}$ -dehydrotriptonide, $\Delta^{5,6}$ -dehydrotriptolide, $\Delta^{5,6}$ -dehydro-14-epitriptolide, (5R,6S)-5,6-epoxytriptonide, (5R,6S)-5,6-epoxytriptolide, (5R,6S)-5,6-epoxy-14-epitriptolide, *cis*-(5R,6S)-5,6-dihydroxytriptonide, *cis*-(5R,6S)-5,6-dihydroxytriptolide, *cis*-(5R,6S)-5,6-dihydroxy-14-epitriptolide.

7. The application of the triptolide derivatives of claim 1 in preparing antiinflammatory agent, immunosuppressant agent or other pharmaceutical compositions in treating related diseases.

8. The application of claim 7, wherein the related diseases include autoimmune diseases (arthritis, systemic lupus erythematosus, chronic nephritis, diabetes); inflammatory diseases (AIDS, virus hepatitis); allergy; skin diseases, cardiovascular diseases and transplant rejection, as well as anti-fertility and immune related diseases.